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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/654,313	09/03/2003	Robert M. Guidash	86321PCW	4417

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Thomas H. Close
Patent Legal Staff
Eastman Kodak Company
343 State Street
Rochester, NY 14650-2201

EXAMINER	
NGUYEN, LUONG TRUNG	
ART UNIT	PAPER NUMBER
2622	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/654,313	GUIDASH, ROBERT M.	
	Examiner	Art Unit	
	LUONG T. NGUYEN	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-18 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-18 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 09/03/03;03/17/05.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 1-7 are objected to because of the following informalities:

Claim 1 (line 6), claim 9 (lines 7-8), "the pixels" should be changed to --the plurality of pixels--.

Claim 1 (line 8), claim 9 (line 9), "the color filter array kernel" should be changed to --the color filter kernel--.

Claim 15 (line 1), "The camera as in claim 1" should be changed to --The camera as in claim 9--.

Claim 18 (line 2), "the camera memory" should be changed to --a camera memory--.

Claims 2-7 are objected as being dependent on claim 1.

Claims 10-16 are objected as being dependent on claim 9.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 7, 15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in

the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 7 and 15, both recite limitation "wherein the integration time pattern is a multiple of the color filter kernel," which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 18 (line 1) recites the limitation "the" in "the data values". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-3, are rejected under 35 U.S.C. 102(e) as being anticipated by Guidash (US 6,714,239).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claim 1, Guidash discloses an image sensor (image sensor, column 4, line 12) comprising:

(a) a plurality of pixels (figures 2-3);

(b) a color filter pattern (Bayer CFA, figures 2-3, column 3, lines 23-35) spanning at least a portion of the pixels, wherein the color filter pattern forms a color filter kernel (a quadrant having 2 rows of 2 pixels, figures 2-3, column 3, lines 25-30) having colors in a predetermined arrangement; and

(c) a mechanism for controlling integration time of the pixels, wherein the integration time of the plurality of pixels is spatially variant in a pattern that is correlated with the color filter array kernel (the integration period for red pixels, blue pixels, green pixels are different, figure 8, column 7, lines 23-33).

Regarding claim 2, Guidash discloses wherein the color filter pattern is a Bayer color filter pattern (Bayer CFA, figures 2-3, column 3, lines 23-35).

Regarding claim 3, Guidash discloses wherein the color filter pattern is a 2x2 kernel (a quadrant having 2 rows of 2 pixels, figures 2-3, column 3, lines 25-30).

8. Claims 1, 3-6, 8-9, 11-14, 16-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Morris et al. (US 6,665,010).

Regarding claims 1, 9, Morris et al. discloses a camera (digital camera 12, figure 1, column 1, lines 8-20) comprising:

an image sensor (digital imager 140, figure 5) comprising:

a plurality of pixels (an array of pixel sensing unit 118, figure 5, column 3, lines 5-30);

a color filter pattern (one group of pixels is associated with red color or green color, figure 5, column 3, lines 30-52) spanning at least a portion of the pixels, wherein the color filter pattern forms a color filter kernel (group of four pixels 113a, 113b, 113c, 113d, figure 5, column 3, lines 5-30) having colors in a predetermined arrangement; and

(c) a mechanism for controlling integration time of the pixels, wherein the integration time of the plurality of pixels is spatially variant in a pattern that is correlated with the color filter array kernel (the integration interval of each group of pixels 113a, 113b, 113c, 113d are different, column 3, lines 5-30).

Regarding claims 3, 11, Morris et al. discloses wherein the color filter pattern is a 2x2 kernel (group of four pixels, figure 5, column 3, lines 5-30).

Regarding claims 4, 12, Morris et al. discloses wherein the integration time pattern is an alternating pattern of two lines at one integration time and adjacent two lines at a second integration time (the integration interval of each group of pixels 113a, 113b, 113c, 113d are different, column 3, lines 5-30).

Regarding claims 5, 13, Morris et al. discloses wherein the integration time for a first set of 2x2 pixels associated with a first kernel is at a first integration time, and the integration time of adjacent 2x2 kernels in the same set of two lines at a second integration time (the integration interval of each group of pixels 113a, 113b, 113c, 113d are different, column 3, lines 5-30).

Regarding claims 6, 14, Morris et al. discloses wherein the integration time pattern of adjacent two lines groups is offset by two pixels (the integration interval of each group of pixels 113a, 113b, 113c, 113d are different, and each group is offset by two pixels 118, column 3, lines 5-30).

Regarding claims 8, 17, Morris et al. discloses a camera (digital camera 12, figure 1, column 1, lines 8-20) comprising:

an image sensor (digital imager 140, figure 5) comprising:

a plurality of pixels arranged in an array of rows and columns (an array of pixel sensing unit 118, figure 5, column 3, lines 5-30);

a readout mechanism that provides a series of output signal values associated with a row sync signal with a number of data signal values corresponding to a number of pixels in a row or desired portion of a row (row decoder 121 provides output signal to select rows of pixel sensing unit 118 for reading out signal value, figure 5, column 7, lines 9-31);

wherein the output signal values have signals that are generated from pixels within at least two physically separate rows within the array (the signal values that are generated from the array of pixel sensing units 118 are transferred to output interface 128, figure 5, column 7, lines 9-31).

Regarding claim 16, Morris et al. discloses a mechanism that reads out at least a subset of the plurality of pixels and uses the signal values obtained from the readout to determine the integration times of the plurality of pixels (integration times for different groups of pixels are independently controlled (column 3, lines 5-50).

Regarding claim 18, Morris et al. discloses the data values are reconstructed in the camera memory (the signals that are readout from imager 140 are stored in memory 263, figure 12, column 7, lines 37-49).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morris et al. (US 6,665,010) in view of Bayer (US 3,971,065).

Regarding claim 10, Morris et al. fails to specifically disclose the color filter pattern is a Bayer color filter pattern. However, Bayer teaches a color image sensing array in which color filters are arranged in a pattern (figure 1B). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in Morris et al. by the teaching of Bayer in order to permit the sampling rates for all three basic color vectors are adjusted respective of the acuity of the human visual system (column 3, lines 6-10).

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUONG T. NGUYEN whose telephone number is (571) 272-7315. The examiner can normally be reached on 7:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DAVID L. OMETZ can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LN
12/26/06

LUONG T. NGUYEN
PATENT EXAMINER